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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,044	01/10/2000	JACKIE R. GUST	26.2.A41/B/USA	3834

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07/06/2006

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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT

PAPER NUMBER

3618

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/480,044	GUST ET AL.	
	Examiner	Art Unit	
	Frank Vanaman	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 23-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 23-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/24/06, 1/27/06</u> | 6) <input type="checkbox"/> Other: _____ |

Status of Application

1. Applicant's amendment, filed Jan 24, 2006, has been entered in the application. Claims 1-13 and 23-29 are pending, claims 26-29 being newly added.

Claim Objections

2. Claims 26 and 28 are objected to for the following informalities: in claim 26, line 11, it appears as though "atengaging" should be - -at engaging- -, and it further appears as though material is missing from the claim; similarly in claim 28, line 5, it appears as though "combustan" should be - -combustion- -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 26-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 26, lines 11-12 and claim 27, line 5, the recitation of "said at least one ground engaging wheel" lacks a clear antecedent basis in view of the recitation of lines 3-4 "a plurality of ground engaging wheels", and the conflicting recitations (e.g. compare lines 3-4 and lines 11-12) appear confusing; also note a similar condition in claims 28-29; in claim 28, line 5, it is not entirely clear what is meant by an "internal combustan electrical generator", further the recitation of an internal combustion electrical generator (as understood) coupled with an internal combustion engine (lines 5-6) is confusing; in claim 26, line 17, it is not clear which of the plurality of electric motors recited previously in the claim is being referred to; in claim 28, line 6 and 14-15), "said internal combustion engine" lacks a clear antecedent basis; as does "said electrical generator" (lines 6-7 and 9-10) and "said mechanical motion" (lines 7-8).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3618

5. Claims 23 and 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Young (US 4,964,265, cited previously). Young teaches a mower with a frame (10), at least one operating unit (20) carried on the frame for performing a turf maintenance function (cutting, in this case, driven by an engine 15), plural ground engaging wheels supporting the frame; a traction system (figure 4) for propelling the frame, a drive system (electric motors 30, reduction gears 35, wheels 25) which may be powered from a battery source (95) or from the engine (15) which is coupled with and drives a generator (97), both engine and battery comprising at least a partial supply of drive power; the system under the control of a controller (e.g., 115) connected to one of the wheel motors.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Arendt (US 1,790,635, cited previously). The reference to Young is discussed above and fails to teach a switch for selecting between an internal combustion power mode and a battery power mode, the switch operable by a user. Arendt teaches a vehicle which includes an internal combustion engine (1) driving a generator (2) and further including a battery (10); the vehicle powered by motors (A, a) powered by the engine or the battery, wherein the vehicle may be operated in an engine-drive mode (see at least p. 1, lines 66-85, and p. 4, lines 40-64), or a battery drive mode (p.2, lines 93-98), wherein at least a switch is provided (automatic switch 12, 70, 71, 72, 73; user operated manual switch 75, 76) to control the drive modes. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mower taught by Young with a device for selecting battery-supplied drive current or engine-generator supplied drive current as taught by Arendt et al. for the

purpose of allowing a user to control whether or not the engine is used, for example to conserve fuel and/or for the purpose of facilitating charge leveling (i.e., prevention of over-charge).

8. Claims 1-10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steele (US 4,870,811) in view of Arendt (cited above). Steele teaches an electrically driven turf machine (note figure 5) in the form of a riding lawn mower, including a frame (shown beneath seat 12); a plurality of ground-engaging wheels, at least some of which are driven by an electric motor (col. 5, lines 27-29), a cutting unit (not specifically referenced, note 39 in fig. 1) driven by a separate electric motor (21); the electric motors being powered by an internal combustion engine (32) operatively connected to a power generating device (34) mechanically driven by the engine. The reference to Steele fails to teach the use of a battery for providing power wherein the vehicle may be provided power from the generator or battery, further including switching mechanisms to allow the selection of engine-generator power or battery power, and including a device for controlling the selection of operational mode based on battery state of charge. Arendt teaches a power system for a vehicle including an internal combustion engine (1) driving a generator (2) and further including a battery (10); the vehicle powered by motors (A, a) powered by the engine or the battery, wherein the vehicle may be operated in an engine-drive mode (see at least p. 1, lines 66-85, and p. 4, lines 40-64), or a battery drive mode (p.2, lines 93-98), the system arranged to allow the engine to recharge the battery (e.g., p.1, lines 59-76) wherein at least a switch is provided (automatic switch 12, 70, 71, 72, 73; user operated manual switch 75, 76) to control the drive modes, the controller further including a connection to the field coils (3) of the generator; the automatic mode including a device (11) for sensing battery state of charge, which includes a display (pointer and scale, element 11) for indicating state of charge and thus a state of charge above or below a chosen value, wherein the battery is prevented from use as a sole source if discharged beyond a predetermined level. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mower taught by Steele with a battery and a device for selecting battery-supplied drive current or engine-generator supplied drive

Art Unit: 3618

current as taught by Arendt for the purpose of allowing a user to operate the vehicle in an emission-free mode (i.e., battery drive only), thus extending the locations and circumstances under which the vehicle may be used, further it would have been obvious to one of ordinary skill in the art at the time of the invention to use a pair of motors as taught by Arendt (note that Arendt teaches that either plural or a single motor(s) may be used) for the purpose of providing each driven wheel with a separate motor, reducing the space required for a single large motor.

As regards claim 8, the combined references fail to specifically teach that an alternator may be used, however it is well known to use an alternator in place of a generator for the purpose of transferring generated power throughout the vehicle (i.e., prior to storage in the battery) using smaller gage wire and to allow easy step-up and step-down of voltages in the drive system (e.g., through the use of a transformer).

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steele in view of Arendt and Downing, Jr. (US 4,196,785, cited previously). The reference to Steele as modified by Arendt as discussed above fails to teach the separate motors as being provided with separate power controls connected to a steering wheel, allowing differential driving under turning conditions. Downing, Jr., teaches the use of a pair of separate motors in a steering application wherein a potentiometer (52), associated with a steering system which may be operated by a steering wheel, is used to deliver differential speed control of a pair of wheel motors (42, 64) driving separate wheels (44, 66). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the vehicle of Steele as modified by Arendt with a differential drive responsive to steering angle as taught by Downing, Jr., for the purpose of assisting a user in tight radius turning.

Response to Comments

10. Applicant's comments, filed with the amendment, have been carefully considered. As regards newly added claims 26-29, applicant has asserted that these claims copy claims 1, 9, 12 and 19 of US Patent 6,857,253. The examiner disagrees. The claims as presented in the instant application vary substantially from those presented in the Patent document.

Art Unit: 3618

Conclusion

11. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618



6/27/06